

This section inventories existing roadway facilities, identifies future needs based upon Enoch's existing roadway master plan, and recommends a plan for installing scheduled improvements. Traffic modeling utilizing QRSII software and review of existing and projected levels of service have been used as a supplement to the existing plan and to help identify areas of future concern.

5.1 Level of Service (LOS)

Adequacy of an existing street system can be quantified by assigning Levels of Service (LOS) to major roadways and intersections. As defined in the *Highway Capacity Manual*, a special report published by the Transportation Research Board, LOS serves as the traditional measuring stick of a roadway's functionality. LOS is identified by reviewing elements such as the number of lanes assigned to a roadway, the amount of traffic using the roadway and amount of delay per vehicle at intersections. Levels of service range from A (free flow) to F (complete congestion).

For instance, for arterial streets, a LOS is based on average vehicle travel speed for the segment, section, or entire arterial under consideration. Following are the LOS definitions used in transportation engineering and for this CFP

LOS A describes primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at signalized intersections is minimal.

LOS B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver in the traffic stream is only slightly restricted and delays are not bothersome.

LOS C represents stable operations; however, ability to maneuver and change lanes in mid-block locations may be more restricted than in LOS "B", and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the arterial classification.

LOS D borders on a range in which small increases in flow may cause substantial increases in approach delay and hence decreases in arterial speed. LOS "D" may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free-flow speed.

LOS E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

LOS F characterizes arterial flow at extremely low speeds, from less than one-third to one-quarter of the free-flow speed. Intersection congestion is likely at critical signalized locations, with long delays and extensive queuing.

5.2 Existing Facilities

As part of this CFP, traffic counts were taken along Midvalley Road, Minersville Highway (SR-130), and Old Highway 91 to identify existing traffic flows. Specific traffic count data is included in the Appendix. Figure 5.1 shows Enoch's current roadway master plan and street functional classifications.

An increase in traffic throughout the city is expected as development continues. If no improvements are made to Enoch's transportation infrastructure, projected traffic volumes will significantly degrade the LOS of the major streets in the city. In order to preserve the quality of life desired by the City's residents, and to provide a sound street system that will support the City's growing population base, improvements will need to be made as growth occurs.

5.3 Future Facilities

Based on the current zoning, demographics, and anticipated growth patterns, Enoch's projected growth will have impacts on traffic volumes and roadways throughout the city. Projections are based upon a new QRSII traffic model that was specifically prepared and tailored for Enoch. The necessary input to create the model is the City's roadway masterplan, traffic counts, and the task of identifying smaller zones throughout the City called Traffic Analysis Zones that target where the population lives and works. Using this model, future traffic volumes were then analyzed. Figure 5.2 shows projected traffic volumes for the planning year 2040.

In 2007, the City of Enoch prepared a Corridor/Interchange Feasibility Study to determine where a future I-15 interchange could be located. A recommendation was made and is used in the traffic model for future traffic scenarios, as can be seen in Figure 5.3. As growth occurs, this interchange will help with traffic throughout the City by providing another access into the City. Today, virtually all of Enoch's population that leaves the City for work, school, and other non-work based trips must pass through Exit 62 on I-15 and Minersville Highway and Old Highway 91. An additional future interchange further to the north would relieve projected congestion on Exit 62.

Enoch's proposed expansion on the east side of I-15 will require a grade-separated crossing over or under I-15 at Midvalley Road. This would provide easy access for this growing area to the central part of the City and its services. It would also reduce the anticipated high volumes at Exit 62.

With the high volumes expected on SR-130 in 2040 (25,000 vehicles per day, or “vpd”) and on Midvalley Road (8,000 vpd), a traffic signal will likely be needed at the intersection of these roadways. The intersection will need to be monitored as volumes begin to cause delays at the stop signs on Midvalley Road to see when a signal is warranted.

Additional recommended projects and their associated costs are addressed further in Section 5.4.

Corridor Preservation

There are several facilities identified in this plan requiring improvements to meet future demands. In planning for these future facilities, corridor preservation techniques should be employed. The main purposes of corridor preservation are to:

- Preserve the viability of future options
- Reduce the cost of these options
- Minimize environmental and socio-economic impacts of future implementation

Corridor preservation seeks to preserve the right-of-way needed for future roadway facilities and prevent development which might be incompatible with these facilities. This is primarily accomplished by the community's ability to apply land use controls such as zoning and approval of developments. Adoption of the CFP by the City of Enoch is a commitment to citizens and future leaders in the community that the identified future corridors will be the ultimate location for roadway facilities.

Perhaps the most important elements of corridor preservation are ensuring that the corridors are preserved in the correct location and that they meet the applicable design and right-of-way standards for the type of facility being proposed. Major roadway corridors have been identified in the roadway master plan. Figure 5.1 illustrates the City's current master planned street system. As this plan does not define the exact alignment of each future corridor, it becomes the responsibility of the City to make sure that the corridors are correctly preserved. This will have to be accomplished through the engineering and planning reviews done within the City as development and annexation requests are approved that involve properties within or adjacent to the future corridors.

5.4 Capital Facilities Plan

The transportation capital facilities plan recommends improvements which will be needed in the future and provides a planning level cost estimate for each improvement. It can provide important information relative to funding needed for future street improvements and can be a valuable tool for City officials in the budgeting and planning process.

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Recommended improvements to roadway facilities have been separated into the following categories: short range (0-5 years); medium range (6-10 years); long range (10+ years). Figure 5.3 illustrates and Table 5.1 summarizes the recommended improvement projects and their anticipated costs.

Cost estimates developed include acquiring sufficient right-of-way and installing new roadbase, asphalt, curb and gutter, park strip, and sidewalk. Costs have also been included for design engineering, construction engineering, and contingencies. The costs are shown in 2010 dollars.

Table 5.1: Budgetary Cost Estimates

Segment	Units	Estimate (millions)	Comments
0-5 Year Improvements			
1 – Turning Lanes at Garden Park Subdivision on Minersville Hwy	1 lump	\$0.27	Road Widening
2 – Ravine Road, widen and pave	0.55 mile	\$1.6	New Road
3 – Spanish Trails additional access road	0.40 mile	\$1.8	New Road
Subtotal		\$3.67	
6-10 Year Improvements			
4 – Midvalley Road Widening from 2 lanes to 3 lanes with shoulder	2.25 miles	\$5.9	New Road
5 – Extend 850 West/Bulldog Rd from Midvalley Road to the south	2.65 miles	\$2.6	New Road
6 – Signal Study and Signal Construction, SR-130 & Midvalley Road	1 lump	\$0.22	New Signal
Subtotal		\$8.72	
10+ Year Improvements			
7 – Widen Minersville Highway (SR-130) from 3 to 5 lanes	3 miles	\$5.0	Road Widening
8 – New Grade-Separation Crossing at Midvalley Road and I-15	1 lump	\$8.3	New Bridge
9 – Belt Route from I-15 along North Side of Enoch to City limit	5 miles	\$21.5	New Road
10 – Interchange on I-15 at North End of Enoch	1 lump	\$21.7	New Interchange
11 – Widen Old Highway 91 from SR-130 to Pomeroy Green	4.50 miles	\$7.6	Road widening
Subtotal		\$64.10	
Total		\$76.49	

The transportation CFP only addresses improvements needed on major streets. As this plan does not address local streets, there may be improvements required for these

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roads that will occur during development of the surrounding areas. Also, regular rehabilitation and maintenance costs are not included.

As development continues throughout Enoch, the CFP and roadway master plan should be consulted to identify improvements that may benefit from work or funds required of individual developers. This will help ensure that the correct amount of right-of-way is preserved, as well as identify projects that the developer may be required to construct or contribute to as part of any required on and/or off-site improvements.